Compliance Matrix

SECTION 9.0 - Miscellaneous	REQUIREMENT	PROPOSAL
9.1 Hours of Operation	1. 5 days a week, 8 hours a day.	1. Mitretek NANP Administration will be available normal business days—five days a week, 8:15 AM Eastern to 5:00 PM Pacific. Mitretek sites will be open normal business days 8:15 AM to 5:00 PM local time.
	2. Mechanism for 24 hour accessibility	2. Mitretek will have a person available 24 hours a day, via beeper.
	3. Respond within 1 business day	3. We will respond within one business day
9.2 Telecommunications Requirements	1. Description of voice communications and computer facilities	1. Mitretek will apply state-of-the-art voice and data processing systems to the NANP Administration requirements. In particular, information systems technology will be used to provide access to timely, consistent information to the NANP (that is, NANPA and COCA) administrators and planners, allowing them to perform their functions more efficiently and to respond to requests from carriers and from the public.
	2. Each staff have individual phone with message capability	2. Each person on the Mitretek NANP Administration staff will have an individual phone number and a voice mailbox.
	3. Access to rating and routing databases	3. Mitretek will ensure that staff required to input and access the RDBS/BRIDS databases will have access to those databases with proper security measures in place. Staff will also have web access to the data Mitretek hosts on the NANP Administration web site.

SECTION 9.0 - Miscellaneous	REQUIREMENT	PROPOSAL
9.3 Security Requirements	1. Proper security measures	1. Mitretek will provide proper security measures for handling sensitive and proprietary carrier information. Mitretek's 100-page security manual is not included, but available for NANC review.
	2. Secured work area with limited access	2. Mitretek will provide a secured work area with limited access. This secured area will reside in our McLean facility which has a Top Secret and Top Secret-Storage certification.
	3. Secured record retention	3. Mitretek will provide secured record retention.
	4. Secured computer systems for proprietary information	4. Mitretek will provide secured computer systems for processing of all data including proprietary information.
	5. Disaster recovery plans and procedures	5. Mitretek maintains a highly developed Disaster Recovery Plan for all of its operations. NANP Administration operations will be subsumed into the overall Mitretek Plan thereby ensuring a true state-of-the-art program for optimum data security and operations maintenance in the event of disaster. A detailed description of Mitretek's approach to disaster and service maintenance will be made to the NANC following development of the plan. The Plan will protect the data resident in the master databases and the web site, and be able to reconstitute normal operations at an alternate site in 24 to 36 hours.
9.4 Staffing Requirements	1. Permanent, full time	1. All essential functions will be performed by permanent full time Mitretek employees dedicated to the NANP Administration functions. Other staff

SECTION 9.0 - Miscellaneous	REQUIREMENT	PROPOSAL
		resources from Mitretek will be available to perform specific functions (such as applications development) on a matrixed basis.
	2. Sufficient level for quick responses	2. Mitretek has developed staffing plans appropriate to ensure that we effectively and efficiently perform all functions in a high-quality and timely response.
	3. Physical location	3. Mitretek NANP Administration operations will be conducted in five Mitretek locations: McLean VA, Atlanta GA, Chicago IL, Denver CO, San Francisco CA.
	4. Ability to travel	4. Mitretek staff will be available to travel, in order to meet all NANP needs of the industry.
	5. Staffing profiles and levels	5. The Mitretek staffing plan was derived from thorough analysis of available data in the Requirements Document. [redacted]
9.5 Organizational Structure	1. Operational structure to meet NANPA and CO Code Administration responsibilities	1. Mitretek proposes an organizational structure that will effectively transition and administer the NANP. Mitretek will establish the NANP Administration as a separate and independent operating entity with its Center for Telecommunications and Advanced Technology.
	2. Centralized, regional, what combination	2. [redacted]

Compliance Matrix

SECTION 9.0 - Miscellaneous	REQUIREMENT	PROPOSAL
	3. Structure and associated number of people	3.
9.6 Reporting Requirements		
9.6.1 NANP Number Resource Reports	1. Reports on semi-annual basis to NANP distribution list on assignments, assignment rates, trends, projections, triggers Jeopardy resources depleted within 2 years shall have monthly reports	1. Mitretek will report on a semi-annual basis including: assignment resources, assignment rates, trends, projections, triggers for industry action. Mitretek will report monthly on resources that require close scrutiny such as jeopardy resources. Mitretek will also issue regular information letters.
9.6.2 North American Numbering Plan Administration Annual	Publish annual report	Mitretek will publish an annual report on the status of NPA and CO codes. The report will include

SECTION 9.0 - Miscellaneous	REQUIREMENT	PROPOSAL
Report		descriptions of the NANP, resources assigned, significant events that occurred.
9.6.3 NANPA Web Site	Update at least weekly the following web site information 1. NANPA 2. NPA 3. NPA-NXX code 4. 900 NXX 5. 500 NXX 6. CIC 7. VSC 8. 456 NXX 9. ANI II	Information will be replicated the next business day and include: 1. NANP administration information (including general information, contact names, telephone numbers, FAX numbers, e-mail addresses). 2. NPA information (including assigned, reserved for NPA relief, non-available, assigned by state/region, locations served, dialing plans). 3. NPA NXX code information (including NPA-NXX assigned, carrier, effective date, NPA-NXX test numbers, unavailable NXXs, summary of assigned and available NXXs per NPA, current data reflecting relief activity). 4. 900 NXX information (including assigned 900 NXX codes and carrier). 5. 500 NXX information (including assigned 900 NXX codes and carrier). 6. Carrier Identification Code information (including assigned CIC and carrier). 7. Vertical Service Code information (including assigned VSC and purpose). 8. 456 NXX information (including assigned 456 NXX codes and carrier). 9. ANI II information (including list of ANI II and stated purpose).

SECTION 9.0 - Miscellaneous	REQUIREMENT	PROPOSAL
	10. 555 XXXX	10. 555-XXXX Line Number Information (including assigned 555-XXXX numbers and carrier/service provider).
	11. N11	11. N11 Service Code Information (including assigned N11 codes and service description).
	12. 800-855	12. 800-855 Number Information (including assigned 800-855 numbers and carrier/service provider).
	13. New number resources as defined	13. Mitretek will add information about new number resources as they are defined.
	14. INC guidelines	14. Hot links to INC Number Resource Assignment Guidelines.
	15. NANPA Informational Letters	15. NANP Administration Information Letters relative to NPA Code Relief.
	16. NANPA information as directed by NANC or regulatory authority	16. Other NANP Administration information as directed by NANC or appropriate regulatory bodies.
	17. Recent NANPA reports (last 6 months of NANPA reports and annual report to the NANC)	17. Recent NANP Administration Reports (within past six months) and Annual Report to NANC.

Compliance Matrix

[redacted]

SECTION 10.0 - Pricing	REQUIREMENT	PROPOSAL
Pricing	5 year proposal separated into: NANPA functions CO Code functions Billing and Collection Agency function	[redacted]
	Total Solution (if applicable)	[redacted]
	American dollars, exclusive of taxes, custom duties, tariffs	[redacted]
	Preferred or most favored customer pricing, including decreases during term	[redacted]

MITRETEK
SYSTEMS

r. H. Gilbert Miller
Vice President
Center for Telecommunications and Advanced Technology

703.610.2900 (voice) 703.610.2303 (fax)
hgmiller@mitretek.org

24 April 1997

Ms. Karen N. Mulberry
NANC NANPA Evaluation Team
Federal Communications Commission
c/o
Common Carrier Bureau
Network Services Division
2000 M Street, NW
Suite 235
Washington, DC 20554

Dear Ms. Mulberry:

Please find enclosed for your consideration the Mitretek answers to the questions provided 17 April 1997.

These answers clarify and, in some cases, modify our proposal. In all cases, these answers should be considered part of our proposal and further should be considered to take precedence over any related portion of our original proposal. At your request, we will prepare specific change pages.

Innovative Technology in the Public Interest

We look forward to meeting with the NANC NANPA Evaluation Team on 2 May 1997. If we can be of further assistance, please do not hesitate to contact me.

Sincerely,

H. Gilbert Miller

HGM/dm

Enclosure

Answers to Written Questions

[redacted] COMMON QUESTIONS ON RESPONDENT PRICING

Question 1

Section 10 - Are the prices quoted in your proposal your best and final prices? If not then please provide them in your responses. If you change your process, then you must indicate what affects, if any, the price changes have on your proposal and provide revised pricing tables.

Answer:

[redacted]

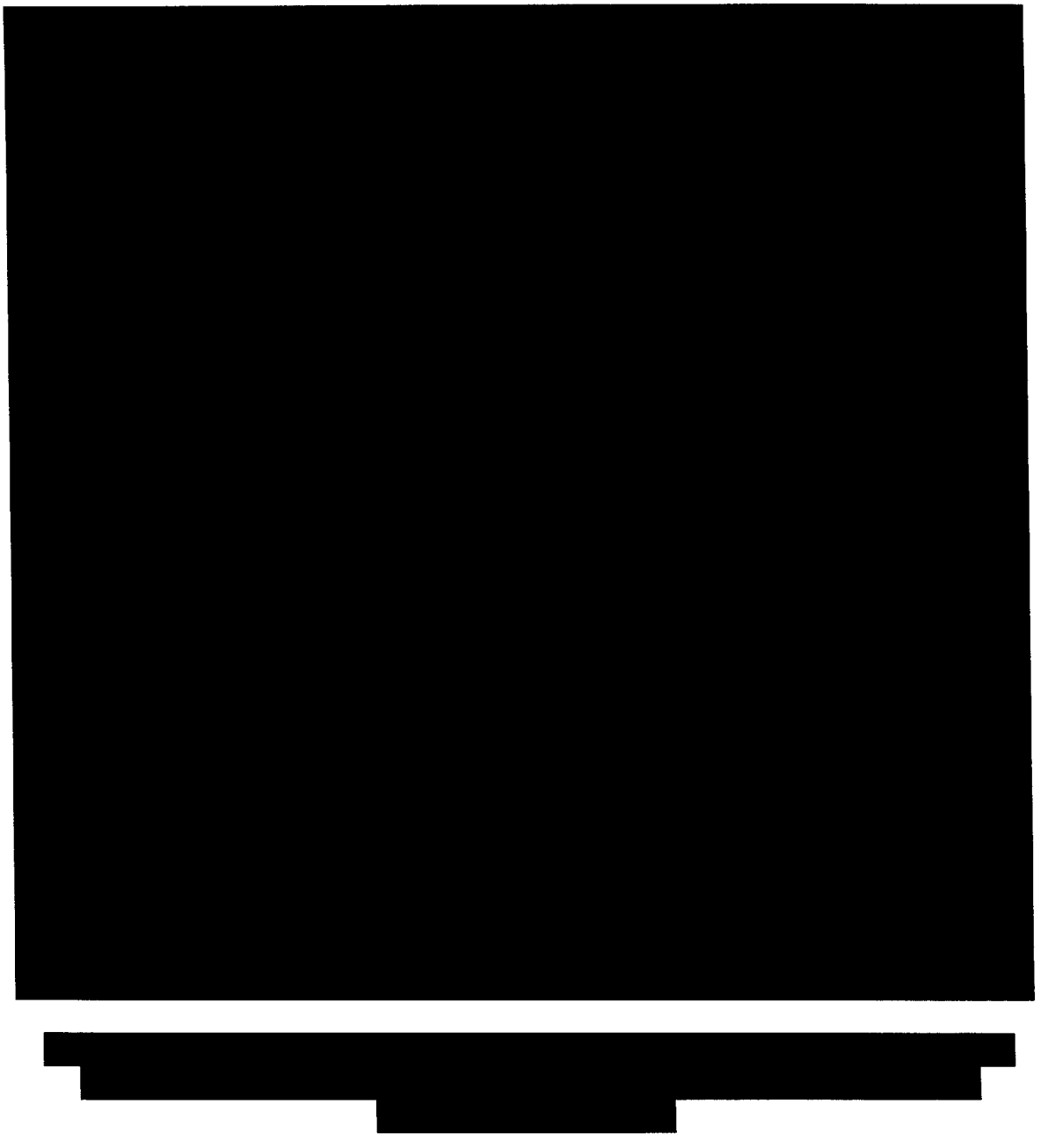
- [redacted]
- [redacted]
- [redacted]

[redacted]

[redacted]					
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]

[redacted]

[redacted]



Question 2

Please provide a breakdown of your price for CO Code Administration into two subcategories, namely: (1) NPA Relief Coordination and (2) CO Code Administration.

Answer:

[redacted]					
[redacted]					
[redacted]					

Question 3

Please provide a breakdown of your price by resource cost categories (e.g., personnel, office space, office facilities, computers, travel, etc.).

Answer:

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

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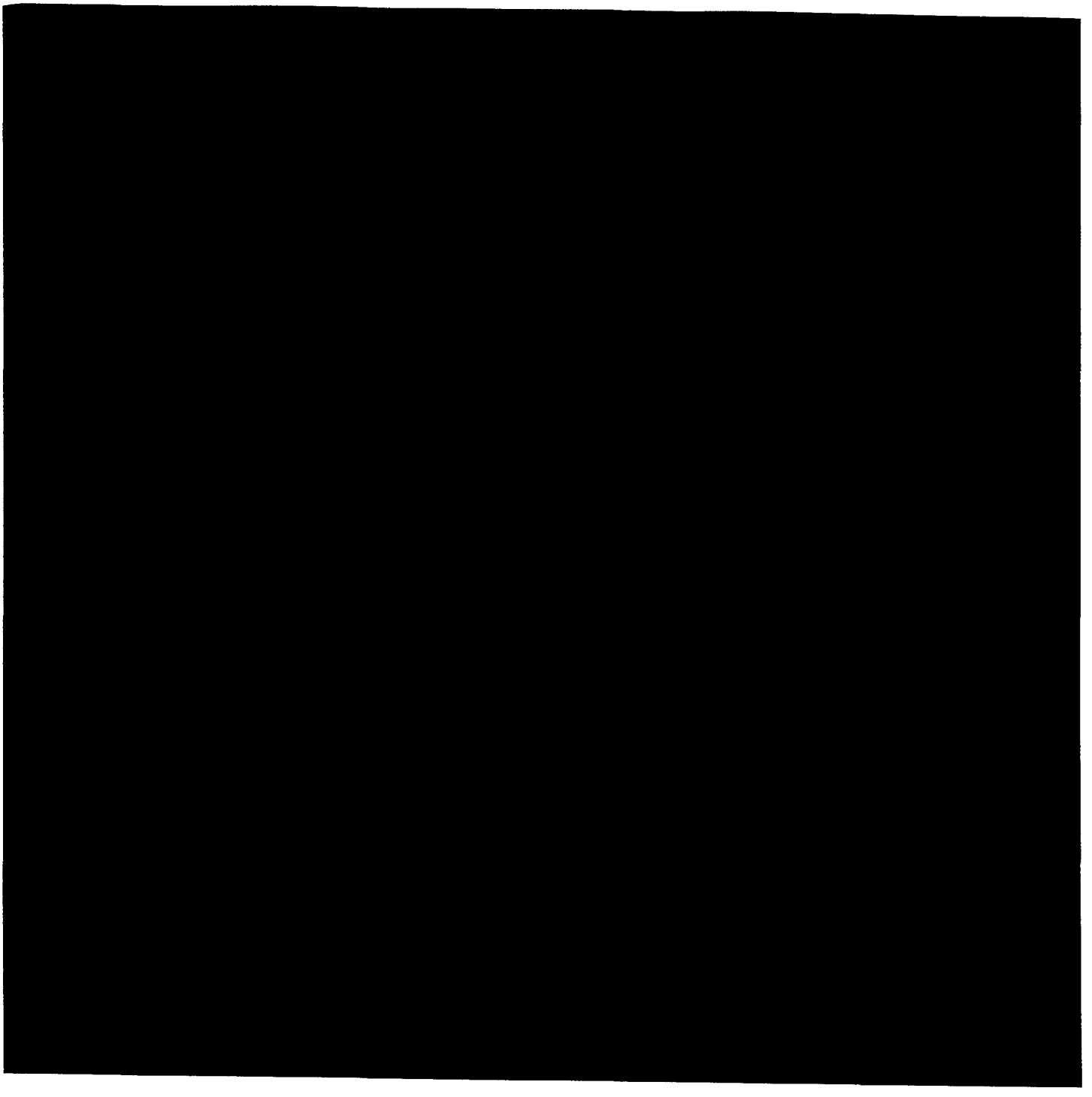

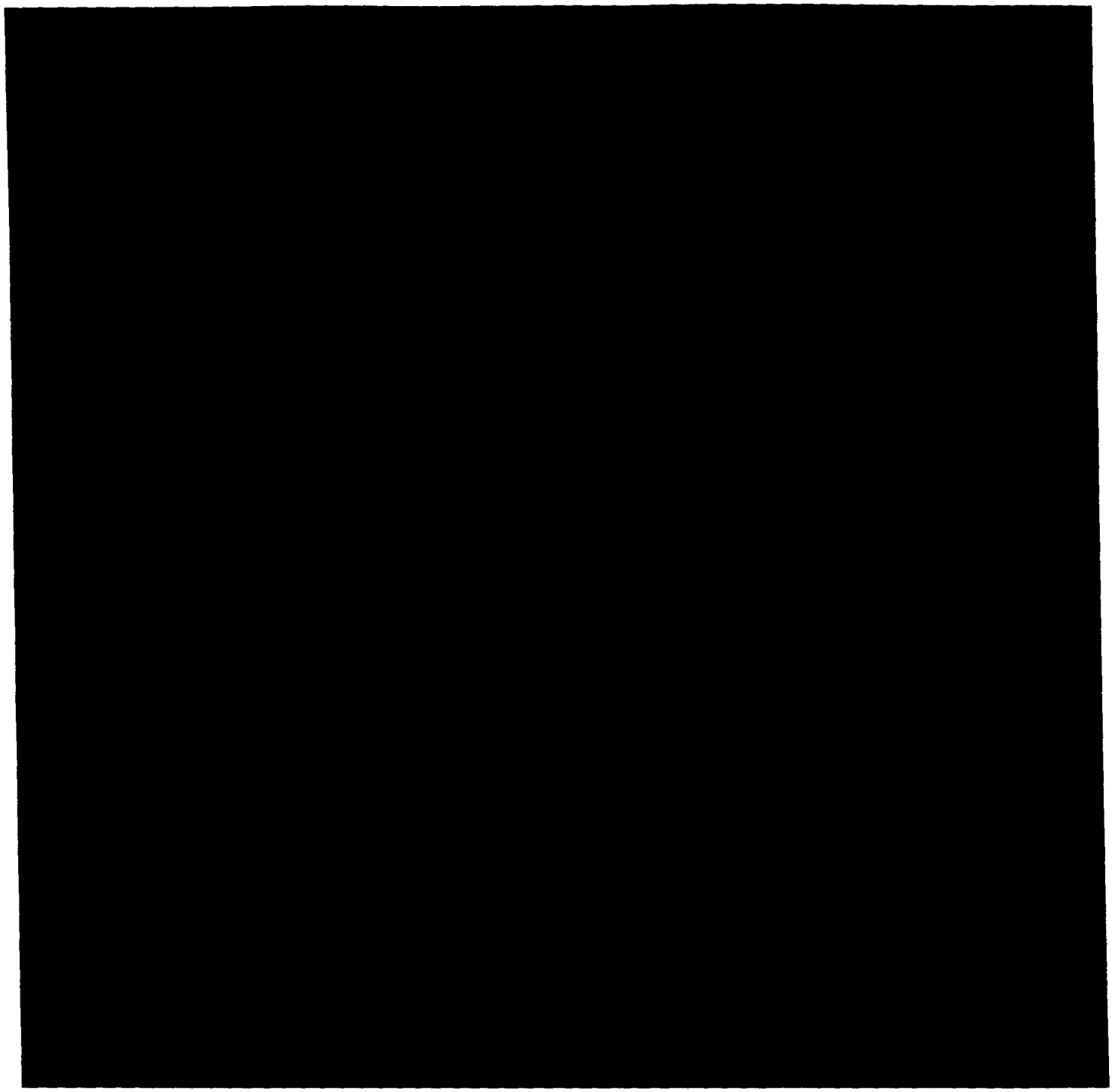

Question 4

Are any functions which are not identified in the Requirements Document included in the price proposed? If so, what are they and how much do they contribute to the price proposed?

Answer:

There are no functions not identified within the NANC NANP Administration Requirements Document which are included within Mitretek's price proposal. Mitretek is completely responsive to all of the functions identified.

Question 1

What is your shortest time frame to implement the required enterprise service?

Answer:

[redacted]

In providing such services, we will:

1. Review the RDBS/BRIDS information of code applicants
2. Assist in the preparation of information
3. Input the information in the associated database

[redacted]

Question 2

Please provide the estimated percentage of each NPA Coordinators' time that would be spent on performing each of the individual duties expected to be discharged by the NPA Relief Coordinator.

Answer:

Generalizations of the time required to discharge each duty is difficult since there are many issues that vary according to the specific NPA. As noted in Paragraph 6.0 of the NPA Relief Planning Guidelines, "It is not possible to identify every potential issue which may arise when planning relief for specific NPA's; each state or province, each metropolitan area, and each industry segment will have unique characteristics which could introduce concerns not included here."

The following is our best estimate of the required time for each major area of responsibility identified in the Guidelines. An average and range are provided for each major area. This estimate includes all sub-tasks identified in the Guidelines.

NPA Relief Planning Process

Guidelines Reference	Average	Range
4.1 Determines the Expected NPA Exhaust Period	3%	2%-3%
4.2 Identify the Alternative Relief Methods Available	10%	8%-12%
4.3 Define the Attributes of Each Alternative or Method	15%	10%-20%
4.4 Notify Industry of Pending NPA Exhaust and Results of Initial Relief Planning	5%	4%-6%
4.5 Conduct Industry Meetings with the Goal of Reaching Industry Consensus on a Relief Plan	40%	35%-45%
4.6 Notify Appropriate Regulatory Body	25%	20%-30%
4.7 Notify the North American Numbering Plan Administrator	1%	<1%-1%
4.8 Public Statements/Press Releases	1%	<1%-1%

Question 3

Please (a) describe the qualities and capabilities of your choice for an NPA exhaust forecasting model. b) Identify the features of your model and (c) how you will employ each feature (e.g. sensitivity analysis) into determining when to declare jeopardy.

Answer:

The NPA exhaust forecasting challenge is similar to the general problem of long term network planning: demand for resources must be anticipated long enough in advance to allow the resources to be provisioned in time. The time delay in resource provisioning in this case is the NPA relief planning cycle and the implementation time of the carriers. The requirement on the forecasting system is to project NPA exhaust far enough in advance to allow the relief process to function as designed.

As with any forecasting system, the future demand is uncertain and is affected by many factors. The qualities and capabilities of any model of future demand must address the following issues:

1. A forecasting system requires the appropriate level of historical data to operate properly. The basis of NPA exhaust prediction is the COCUS, which provides a count of the CO codes in use for the current year and a projection of the codes required for the next six years. The survey is submitted once each year by the companies that are actual code holders in the NPA being surveyed. The current NANP Administration

then predicts the exhaust date for each NPA and publishes the results. More data points within the year would improve the accuracy of the forecast and would react more quickly to new trends.

2. Demand can accrue from normal growth. The forecasting system must be able to extract the nature of this growth from historical data. In many systems, this growth is not linear (e.g., population growth is often exponential, doubling in a fixed number of years). For these systems, linear projections will always underestimate the future demand until it is too late to react. The prediction function used in the model must be flexible enough to handle a wide range of growth situations.
3. There are some historical data points that either resulted from known one-time events or were anomalies and not indicative of the general growth trend. These data points must be removed from the historical set before the parameters of the growth prediction function are determined. The model must use mathematical techniques to identify these "outlier" data points and not require intervention by the user.
4. The nature of the demand growth may change over time. While enough history must be used to characterize a trend, too much history will keep the model from reacting to changes and identifying new trends. The method of handling historical data must be flexible in a model; the best parameters to use for a specific problem must be determined on a case-by-case basis.

Mitretek's forecast model has features that implement all of the above required capabilities. The combining of the traditional NANPA and COCA functions allows a more proactive approach to be taken to exhaust prediction. Mitretek's CO Code database will contain current and historical information on the number of codes utilized in each NPA. At any given time, a six year projection based on the most current COCUS will also be available. Mitretek's analytic forecasting model can be run weekly (or even daily) as new assignment data is entered into the database. In addition, if the guidelines allowed, new forecast data should be obtained from a carrier when it is requesting its first code or when its actual code assignments during a year exceed its forecast for that year. In this way, the forecasting model can flag impending exhaust situations when they first manifest themselves instead of discovering a jeopardy situation already in progress at the annual COCUS review.

The Mitretek model will have several prediction functions built-in to identify a wide range of trend types. At a minimum, linear, higher order polynomial, and exponential functions will be used. Each individual run of the model will use a particular prediction function and historical data weighting data function. The best parameters for the prediction function for each NPA will be determined using autocorrelation techniques. Sensitivity runs will be made using different prediction functions; the model will automatically select the function with the highest confidence interval (minimum expected error).